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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/057,270

01/26/2002

George E. Fox

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26830

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05/05/2006

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EXAMINER

SIMS, JASON M

ART UNIT

PAPER NUMBER

1631

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/057,270	Applicant(s) FOX ET AL.	
	Examiner Jason M. Sims	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-3, 11-18 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-9 and 19 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-A13)<br>Paper No(s)/Mail Date. <u>4/27/06</u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                 |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/09/2002</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

During a telephone conversation with Richard Coale Wilson on 4/27/2006 a provisional species election was made for species of parsimony methods without traverse to prosecute the invention of inventive group II, claims 4-10 and 19-20. Affirmation of this species election must be made by applicant in replying to this Office action.

Applicant's election of group II, claims 4-10 and 19-20, in the reply filed on 2/17/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant's amendment of claim 20 now depends from and is being drawn to a non-elected inventive group with specifics of claim I (Group I), which are distinct from the claim 4 (Group II) signature probe practice and has thus been withdrawn.

Claims 1-3, 11-18, and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventive group, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 2/17/2006.

### ***Claim Objections***

Claim 10 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must be written in the alternative only. Claim 10 is a multiple dependent claim depending from claims 1 and 4, but not written in the

alternative and therefore is not compliant with the guidelines for writing multiple dependent claims. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 4-9 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the bifurcating tree of genetic relationship" in step D. There is insufficient antecedent basis for this limitation in the claim.

Claims 5-9 and 19 are rejected as being dependent from a rejected claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al. (US P/N 5217862) in view of Barbour et al. (US P/N 5,932,220).

Barnes et al. teaches step A of the method of Claim 4 at p. 4, col. 5, lines 50-68 and col. 6, lines 1-15, where the tables are the database of signature sequences from which the signature probes are aligned or derived as required by step A of Claim 4.

Barnes et al. teaches step B of the method of Claim 4 at p. 4, col. 5, lines 18-45, where the signature probes are modified as signal-carrying probes or to carry detection ligands, such as fluorescein, as required by step B of Claim 4.

Barnes et al. teaches steps C-E of the method of Claim 4 and 9 at p. 4, col. 6, lines 20-68 and p. 5, col. 7, lines 1-34 describe using a phylogenetic relationship to identify the closest known genetic relatives of the organism. Additionally, Barnes et al. teaches identifying the organism in the test sample that is within the most terminal node as supported by the signature probes in the dot blot hybridization tests as required in steps D and E of Claim 4. Barnes et al. describes using the dot blot hybridization and building of a phylogenetic relationship tree with respect to a specific species of bacterium.

Barnes et al. teaches Claim 5 requirements of the signature probes comprising particular biological material at p. 3, col. 4, lines 27-39, where Barnes et al. describes the signature probes comprising DNA or RNA sequences.

Barnes et al. teaches Claim 6 and 7 hybridization utilizing an immobilized array of signature probes along with a detection step utilizing radioactive, chemiluminescence and/or fluorescence at p. 6, col. 6, lines 21-61.

Claim 19 recites the phrase "fragment of the foregoing." This phrase has been interpreted to mean a fragment of either of the reference DNA regions prior to using this

phrase; the DNA fragment could either be from the spacer region between ribosomal RNA genes or a fragment of the ribosomal RNA genes. Barnes et al. teaches using signature probes of length 6 or larger at p. 5, col. 7, lines 35-66 where the physical description of the probes is discussed. Additionally, Barnes et al. teaches isolating the nucleic acid from ribosomal RNA genes at p. 4, col. 6, lines 55-69 and p. 5, col. 7, lines 1-34.

Barnes et al. does not specifically teach a sequence analysis using parsimony methods.

Barbour et al. teaches doing a sequence analysis using parsimony methods at p. 18, col. 29, lines 23-42.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the parsimony method of sequence analysis taught by Barbour et al. to the creation of signature probes using phylogenetic analysis taught by Barnes et al. because using a parsimony method is very suitable for an analysis of sequences which are quite similar. Therefore, when creating probes that need species specific designing, then a careful analysis of very similar sequences is required. In addition, when determining an evolutionary tree of related organisms, the parsimony method not only creates an evolutionary tree, but also examines all possible evolutionary trees to result in the most probable phylogenetic tree.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Sims, whose telephone number is (571)-272-7540.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ardin Marschel can be reached via telephone (571)-272-0718.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (571)-273-8300.

Any inquire of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (571)-272-0549.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 5/1/06  
ARDIN H. MARSCHEL  
SUPERVISORY PATENT EXAMINER